THE BLACK GROUSE, Tetrao tetrix *(L., 1758) (TETRAONIDAE, AVES), A DISAPPEARED SPECIES IN BULGARIA (PALEOLITHIC AND NEOLITHIC RECORDS)*

Zlatozar BOEV*

Summary

The black grouse has been included in the Bulgarian Red Data Book *as a disappeared species according to various unproved records on its former distribution through the country in the 19th and 20th centuries. The paper aims to present all data available so far, both in the literature and author's ones to clarify the former existence of that species in Bulgaria.*

Recently three bone finds of early Neolithic Age (Kazanluk, 6000 bc) have been published. In addition, in 1993 four other bones from three new different sites (Paleolithic, Neolithic and "Holocene") have been discovered. Thus, the former distribution of Tetrao tetrix *in the Quaternary covers: Central Rhodopes Mts., Western Stara Planina Mts., foothills of Central Stara Planina Mts. and the Ludogorije Region, i.e. Central, Western, Southern and Northeastern parts of the country. Therefore, the black grouse should be correctly considered as a disappeared species from the Bulgarian nature and its disappearance may be attributed to the economic activities of man (devastation of natural habitats for agriculture, over-hunting and drastic deforestation) during the Holocene.*

Résumé

Le tétras lyre,* Tetrao tetrix *(L., 1758) (Tetraonidae, Aves) : espèce éteinte en Bulgarie (données paléolithiques et néolithiques).

Le tétras lyre a été porté au nombre des espèces éteintes dans le Livre Rouge de Bulgarie, *sur la base de données non vérifiées concernant sa distribution dans le pays aux 19e et 20e siècles. Cet article vise à présenter toutes les données disponibles à ce jour, qu'elles soient issues de la bibliographie ou détenues de manière inédite par l'auteur, afin de clarifier l'existence ancienne de cette espèce en Bulgarie.*

Récemment, trois restes squelettiques du Néolithique ancien (Kazanluk, 6000 bc) ont été publiés. De plus, en 1993, quatre autres os issus de trois sites différents (Paléolithique, Néolithique et "Holocène") ont été découverts. Il apparaît que la distribution originelle de Tetrao tetrix *durant le Quaternaire couvrait : les monts du Rhodopes central, les monts occidentaux du Stara Planina, les bas de versants des monts centraux du Stara Planina, ainsi que la région de Ludogorije, soit les régions centrale, occidentale, méridionale et nord-orientale du pays. En conséquence, il est juste de considérer le tétras lyre comme une espèce éteinte en Bulgarie et sa disparition peut être attribuée aux activités économiques de l'homme (destruction de l'habitat naturel par l'agriculture, sur-chasse et déforestation massive) durant l'Holocène.*

Zusammenfassung

Das Birkhuhn,* Tetrao tetrix *(L. 1758) (Tetraonidae, Aves) - eine verschwundene Spezies in Bulgarien (Nachweise aus dem Paläolithikum und Neolithikum).

Das Birkhuhn wurde aufgrund verschiedener ungeprüfter Nachweise über seine Verbreitung in Bulgarien im 19. und 20. Jahrhundert als verschwundene Spezies in die Rote Liste des Landes *aufgenommen. Um die vormalige Existenz dieser Art in Bulgarien zu klären, werden in diesem Beitrag alle verfügbaren Daten, sowohl aus der Literatur als auch diejenigen des Autors, präsentiert.*

In jüngster Zeit wurden drei Knochenfunde aus dem frühen Neolithikum (Kazanluk, 6000 v. Chr.) publiziert. Zusätzlich kamen im Jahr 1993 vier weitere Knochen aus drei neuen Fundstellen (Paläolithikum, Neolithikum und "Holozän") zutage. Demzufolge reichte die Verbreitung des Birkhuhnes im Quartär über die Central Rhodopes Mountains, die Western Stara Planina Mountains, das Vorgebirge der Central Planina Mountains und die Ludogorije Region, das heißt die zentralen, westlichen, südlichen und nordöstlichen Landesteile. Daraufhin kann das Birkhuhn tatsächlich als aus der bulgarischen Natur verschwundene Spezies gelten. Sein Verschwinden ist wahrscheinlich verschiedenen ökonomischen Aktivitäten des Menschen im Laufe des Holozäns zuzuschreiben: Zerstörung natürlicher Habitate zur landwirtschaftlichen Nutzung, Überjagung und drastische Abholzung.

Key Words

Extinction, Black grouse, Balkans, Bulgaria, Quaternary.

Mots clés

Extinction, Tétras lyre, Balkans, Bulgarie, Quaternaire.

Schlüsselworte

Aussterben, Birkhuhn, Balkan, Bulgarien, Quartär.

* *National Museum of Natural History, Bulgarian Academy of Sciences, 1 blv. Tzar Osvoboditel, 1000 Sofia, Bulgaria.*

Two species of the five European Tetraonid birds (family Tetraonidae) are represented in the recent avifauna of Bulgaria: the capercaillie (*Tetrao urogallus* (L., 1758), and the hazelhen (*Tetrastes bonasia* (L., 1758)). The third species, the ptarmigan (*Lagopus mutus* Montin, 1776), is reported by Bochenski (1982) from the Paleolithic cave Bacho Kiro (Central Stara Planina Mts.). Additionally, a fossil species (*Lagopus balcanicus*) is described from the Middle Villafranchian deposits in Varshets (Western Stara Planina Mts.; Boev, 1994). As an arboreal group of birds, by their origin, Tetraonids appeared in Eastern and Southeastern Europe during the Pliocene period (Janossy, 1987).

The black grouse (*Tetrao tetrix* (L., 1758)) is included in the *Bulgarian Red Data Book* as a disappeared species (Boev, 1985), according to various written data on its "existence" in the country. Unfortunately, Bulgarian ornithology had not any true data (concrete date and place of records, collected specimens, observed nests, etc.), so the question of former spread and disappearence of the black grouse in the last several centuries remained unresolved.

The present paper summarizes all data available so far in the literature and author's record on the former existence of *Tetrao tetrix* in Bulgaria.

Couturier and Couturier (1980) assume that the species was widly spread in Europe during the Pliocene. Brodkorb (1964) reports over 80 Quaternary sites, nine of them from the Pleistocene. Small share of Holocene sites (Neolithic to Bronze Age) testify of its recent range (Malta, Spain, Monaco). The finds from Rumania are dated from the Günz, Mindel and Würm.

T. tetrix inhabited forest and forest-steppe habitats on Balkans till the middle of the current century. It has disappeared in most of its range in Rumania by 1880 and from Western Serbia in 1934 (Cramp *et al.*, 1980). Nowadays, in former Yugoslavia and Rumania, *T. tetrix* is to be completely extinct (Couturier and Couturier, 1980; Boev, 1985). The species is not included in the recent avifaunas of Macedonia (Dimovski and Matvejev, 1955) and Greece (Lambert, 1957; Bauer *et al.*, 1969; Simeonov and Michev, 1991).

Howard and Moore (1980) and Juana (1994) enlist seven subspecies of *T. tetrix*, one of which (the nominate *T. tetrix tetrix*) is spread in Middle and Northern Europe. Following numerous data on the southernmost distribution of the black grouse in Southeastern Europe (Voous, 1960; Makatsch, 1974; Cramp *et al.*, 1980), we may consider as correct the assumptions about its former distribution through Bulgaria.

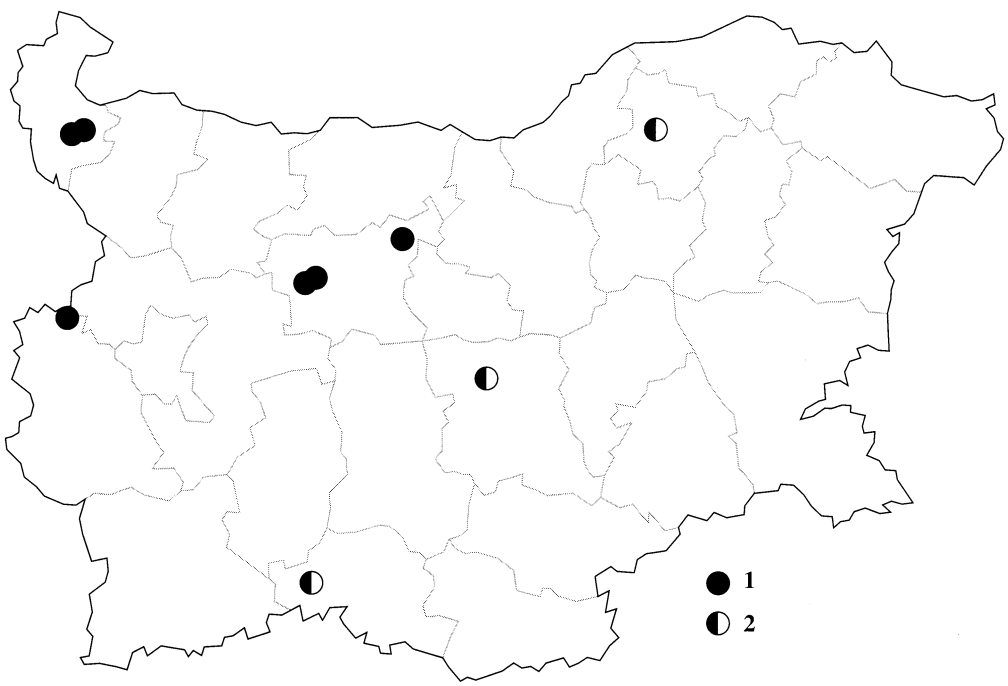

Fig. 1: Distribution of *Tetrao tetrix* in Bulgaria in the Quaternary: 1) Pleistocene records; 2) Holocene records.

Table 1: The measurements (mm) of the fossil and recent *Tetrao tetrix*. The manner of measuring is shown on figure 2.

Species		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
Fossil																				
5417	*T. tetrix*	6.9	5.8	12.3	6.9	3.0														
5411	*T. tetrix*				7.0	3.3	10.2	14.5	13.4											
5444	*T. tetrix*									6.9	9.4	4.6	4.1	9.7	5.4	5.5				
5806	*T. tetrix*																5.9	5.6	4.2	2.7
Recent																				
1/1982	*T. tetrix*	7.5	5.6	13.0	6.7	3.3	10.3	15.0	12.7								5.7	6.3	4.3	3.4
2/1982	*T. tetrix*	7.2	5.6	13.3	6.1	3.1	9.3	13.5	12.9								6.0	6.2	4.7	3.6
1/1986	*L. mutus*																4.2	4.5	2.3	2.0
1/1986	*L. lagopus*	6.7	4.2	10.6	4.8	2.2	7.1	10.7	9.6	6.0	8.9	3.6	3.7	9.1	4.7	5.0	5.3	5.5	4.3	1.9
4/1989	*T. urogallus*	13.0	9.8	20.3	9.4	4.8	13.5	21.0	19.0	10.9	16.5	7.0	7.1	16.1	9.5	9.9	9.0	9.4	7.4	5.6
11/1988	*Ph. colchicus*	8.8	5.7	12.3	4.7	2.5	8.4	12.5	12.2	7.6	11.7	5.6	5.0	11.3	6.2	5.4	6.7	6.6	3.3	3.9

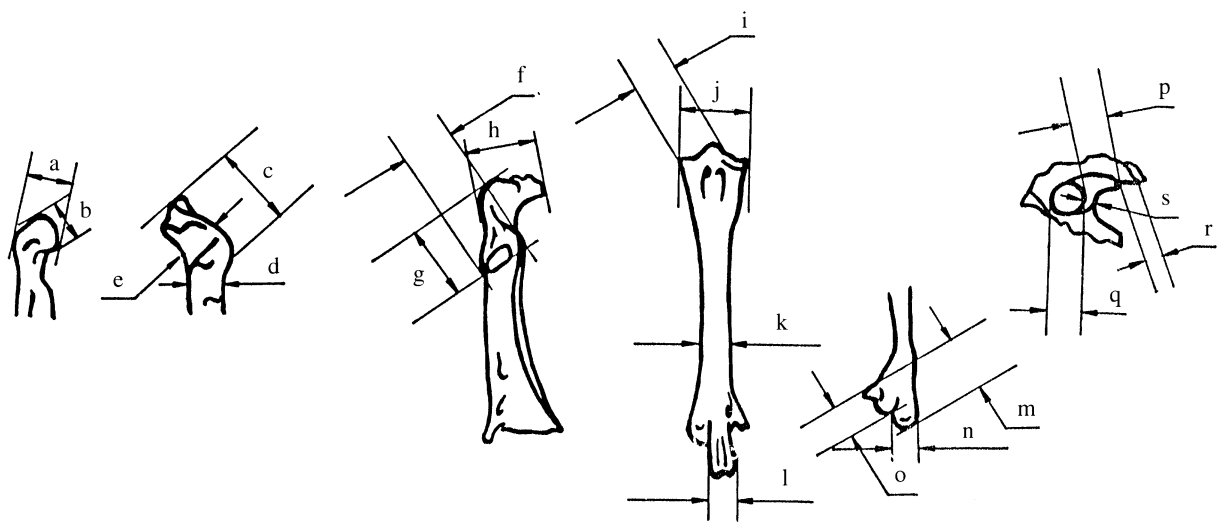

Fig. 2: The manner of measurings of the bones of *Tetrao tetrix* (a drawing of R. Syrenkova).

Recently, the first proof of the existence of that species in Bulgaria have been published by the author (Boev, 1988). The three bone finds (one right humeral and two synsacral bones) of two adult individuals of *T. tetrix* originate from the Neolithic mound at Kazanluk (ca. 6 000 bc). The humeral bone is wholly burned, while the synsacrums are broken and only their axial fragments (*corpora vertebrorum*) are preserved.

Later, a new find of the same Neolithic settlement has been discovered: another humeral bone (left), also burned, has been reported by Boev (1993).

In 1993-1994, four other finds of *T. tetrix* from three new localities (fig. 1) have been collected and examined in the National Museum of Natural History in Sofia. Their short description is as follows:

Tetrao cf. *tetrix* - Cat. No. 5411 - coracoid sin. ad. Locality: Yagodinska Cave (Central Rhodopes Mts.) UTM - KG 71; about 1 200 m asl; Age: ca. 4 000 bc (Eneolithic).

Tetrao tetrix - Cat. No 5417 - coracoid dex. dist. ad. Locality: Mirizlivka Cave (Western Stara Planina Mts., Western Balkan Range) UTM - FP 43; about 750 m asl; Age: Paleolithic.

Tetrao tetrix - Cat. No 5444 - tarsometatarsus sin. ad. and No 5806 - synsacrum, *pars acetabularis* sin. ad. Locality: Toptchii (Ludogorije Region) UTM - MJ 53; about 300 m asl. Age: Holocene. The morphological and osteometrical comparison (tab. 1; fig. 2) show a close resemblance of all finds to *T. tetrix*.

The eigth bone finds of *Tetrao tetrix* from the four cited sites in Bulgaria inequivocably confirm the former spread of that tetraonid species through the country in the Quaternary (fig. 1). Its disappearance during the Holocene may be attributed to the economic activities of man (devastation of natural habitats for agriculture, over-hunting and drastic deforestatation).

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